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FIRST SPECIES OF *AUSTROPSOPILIO* (OPILIONES, CADDOIDEA, CADDIDAE) FROM SOUTH AMERICA

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ABSTRACT. The first species of the genus *Austropsopilio* is described from South America. The species, *A. sudamericanus*, closely resembles those from Australia and Tasmania but lacks the elongate ocular tubercle previously regarded as diagnostic for the genus. Problems in the taxonomy of the genus are discussed.

RESUMEN. Se reporta por primera vez la presencia del Género *Austropsopilio* para Sudamérica. La especie *A. sudamericanus*, se parece bastante a las de Australia y Tasmania, pero no posee el tubérculo ocular previamente indicado en la diagnosis del génerica. Se discute la problemática en la taxonomía del género.

Keywords: *Austropsopilio*, Opiliones, harvestman, Chile, systematics, South America, new species

Until now, the caddoid genus *Austropsopilio* Forster 1955 encompassed two described species from eastern Australia (Forster 1955; Cantrell 1980) and one from Tasmania (Hickman 1957) and at least one undescribed species from South America (Cokendolpher & Maury 1990). The type species, *A. novaehollandiae* Forster 1955, was described from a single "immature female," and differed from the other then-recognized caddoid genera, namely, *Caddo* Banks 1892, *Acropsopilio* Silvestri 1904 (syn. *Zeopsoplio* Forster 1948) and *Caddella* Hirst 1925 (syn. *Oonopsopilio* Lawrence 1931) in having an anteriorly elongated eye tubercle ending in a bilateral pair of projections and large palps in which all articles except the tarsus bear one or more large spiny apophyses. Shear (1975, 1996) argued that *Tasmanopilio* Hickman 1957 should be synonymized with *Austropsopilio* based on similarities in pedipalpal structure, but Cokendolpher & Maury (1990), citing observations of Gruber (1974), argued for the distinctness of the two genera.

Here we describe the first species of *Austropsopilio* from South America. Cokendolpher & Maury (1990) reported the presence of the genus in Valdivian rainforests of Chile and immediately adjacent regions in Argentina based on numerous immatures and one poorly preserved adult female. Given the paucity of taxonomically useful material, they chose not to describe a new species. Adult females (but no males) were collected by the junior author via Berlese extraction from Valdivian rainforests in April 2001, thereby allowing a new species to be diagnosed and described.

All specimens collected by T. Cekalovic. Abbreviations: AMNH, American Museum of Natural History, New York; UMD, J.W. Shultz, University of Maryland, College Park.

SYSTEMATICS

Austropsopilio sudamericanus
new species
Figs. 1–12

Austropsopilio sp.: Cokendolpher & Maury 1990: 61.

Type data.—Holotype: adult female, CHILE: Provincia Valdivia, Parque Oncol (39°41′S, 73°18′W), 13 April 2001, T. Cekalovic. Paratype: 1 immature, CHILE: Provincia Valdivia, Parque Oncol (39°41′S, 73°18′W), 600 m, 4 January 2002, T. Cekalovic. Holotype and paratype deposited in AMNH.

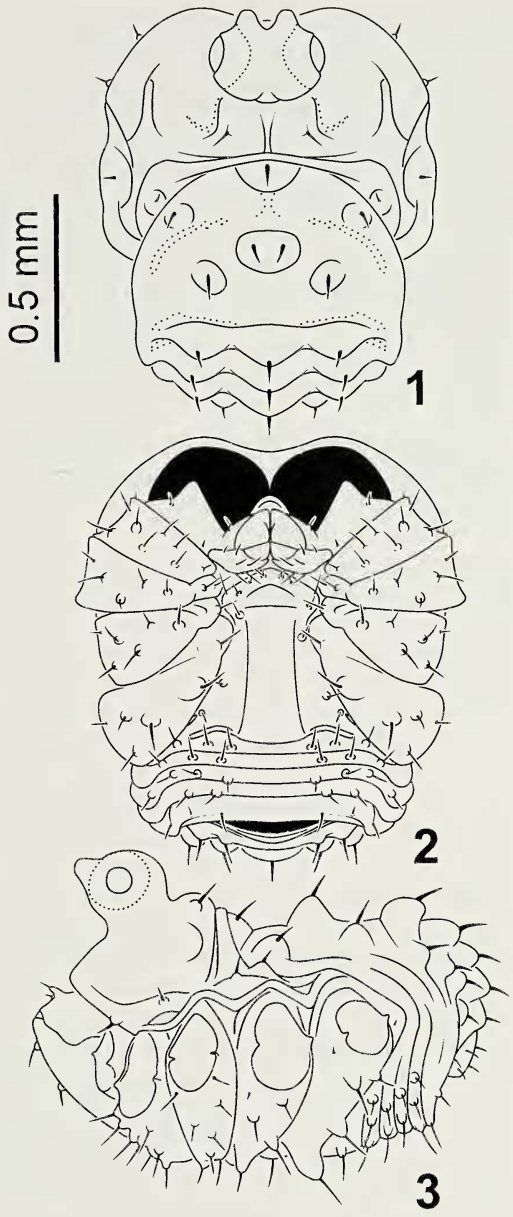
Other material (non-types).—CHILE: *Valdivia*: Parque Oncol (39°41′S, 73°18′W),

13 February 2000, 5 immatures (AMNH); 19 February 2000, 2 immatures (AMNH). Cerro Oncol (39°41′S, 73°18′W), 485 m, 15 February 2000, 1 immature (AMNH); 485 m, 13 April 2001, 10 females (UMD); 485 m, 13 April 2001, 2 ♀(AMNH); 700 m, 14 January 2001, 2 immatures (AMNH). Sendero Calfuco (39°41′S, 73°18′W), 20 January 2001, 2 immatures (AMNH); 16 January 2001, 17 immatures (AMNH); 9 January 2001, 4 immatures (AMNH); 600m, 4 January 2002, 7 immatures (UMD). Sendero Punucapa (39°41′S, 73°18′W), 3 January 2002, 1 immature (UMD). *Chiloe*: Isla Chiloe: Pid-Pid (42°24′S, 73°47′W), 4 February 2001, 1 immature (AMNH). Estero Llicaldad (42°31′S, 73°48′W), 6 February 2001, 2 immatures (AMNH). San Antonio de Chadmo (42°58′S, 73°37′W), 8 February 2001, 6 immatures (AMNH).

Etymology.—The species is named for being the first representative of its genus discovered in South America.

Distribution.—*Austropsopilio* has been collected in the Region de los Lagos of Chile and adjacent regions of Argentina (39°–40° S. Lat.) south through the northern half of Provincia Aisen (~ 46° S. Lat.) (Cokendolpher & Maury 1990).

Diagnosis.—*Austropsopilio sudamericanus* is the first and only species of the genus known from South America; other species occur in eastern Australia and Tasmania. *A. sudamericanus* differs from all other known species in that the lenses and body of the eye tubercle do not extend beyond the anterior margin of the carapace, although the paired projections of the optic tubercle may extend to the anterior margin of the carapace. In addition, the spine-bearing prominences on the opisthosomal tergum (Figs. 1, 3) are much larger in adult female *A. sudamericanus* than in other species, although they are not enlarged in earlier instars.



Figures 1–3.—General morphology of a typical adult female *A. sudamericanus*. 1. dorsal perspective. 2. ventral perspective. 3. lateral perspective.

Description.—*Adult female*: Carapace in the form of a broad, strongly recurved crescent; posterior concavity receiving opisthosoma (Fig. 1). Posterior lateral angles of carapace embracing lateral surface of opisthosoma to level of lateral posterior margin of first opisthosomal tergite. Anterior margin of carapace with broad but shallow, median supracheliceral emargination (Figs. 1, 2). Anterior margin of carapace folds ventrally to form a triangular supracheliceral doublure that passes posteriorly, tapers and attaches to the dorsal margin of the epistome (Fig. 2). Central periocular region of propeltidium steeply elevated, separated from less elevated lateral marginal fold by a bilateral pair of large, roughly longitudinal, submarginal sigillary depressions. Propeltidium lightly colored with coat-

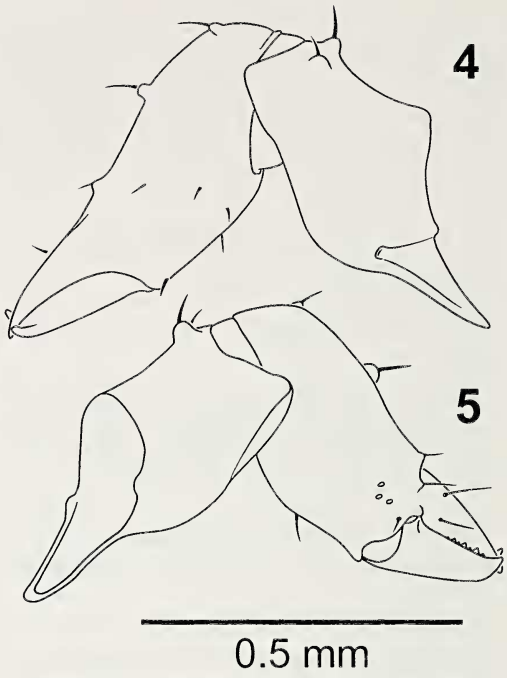
ing of small, dark denticles; denticles decrease in size and density on ocular tubercle.

Ocular tubercle large, occupying over one third the midsagittal length of the prosoma, not noticeably elongated. Ocular tubercle slightly oval in lateral perspective; wider than long in dorsal perspective, width (including lenses) about one-third maximum width of carapace. Ocular tubercle with wide, shallow midsagittal groove. Anterodorsal surface with bilateral pair of thick, blunt projections extending anterodorsally to a point approximately even with the anterior margin of the carapace.

Marginal fold weakly developed anteriorly, progressively more well developed posteriorly; scalloped in lateral perspective with three arches (Fig. 3). Arch associated with coxa II very pronounced; arch associated with coxa III less pronounced; arch associated with coxa IV with anterior half formed by marginal fold of prosoma and posterior half by lateral surface of opisthosoma. Marginal fold inflated anterior and posterior to first arch; inflated regions separated dorsally by a variably developed oblique groove. Ozopore opens within depression on lateral margin of fold just anterior to first arch. Lateral margin with three bilateral pairs of spines. First pair projecting anteroventrally at level of pedipalpal coxa, second pair projecting anterolaterally from anterior inflated region, third pair projecting dorsally from posterior inflated region.

Mesopeltidium with large postocular mound with one bilateral pair of stout spines; mound posteriorly with shallow midsagittal groove. Mesopeltidium separated from propeltidium laterally by bilateral pair of darkly colored procurved grooves which fade laterally. Cuticle with coloration and denticles like those of the propeltidium. Metapeltidium represented medially by a thin transverse fold, separated from mesopeltidium by a distinct transverse groove that fades laterally into the submarginal depressions. The metapeltidial fold expands laterally and turns abruptly posteriorly to embrace the lateral surface of the opisthosoma. Lateral portions of fold with one bilateral pair of large rounded prominences, each prominence with a recurved spine. Cuticle of metapeltidium darker than remainder of carapace and similar to opisthosoma in having dense coat of coarse, dark denticles.

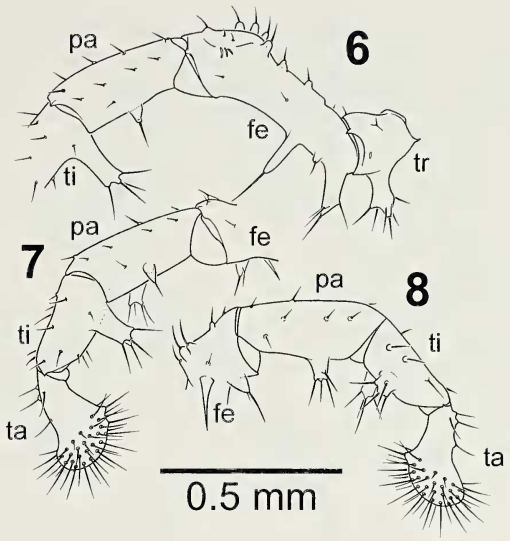
Chelicera: First article lightly colored with scattered, small dark denticles; one superior spine extending from a well-developed tubercle and a smaller, medially adjacent spine emerging from a smaller tubercle (Figs. 4, 5); a third small spine variably present. Second article lightly colored and with scattered small dark denticles, but cuticle of fixed finger and pericondylar regions dark brown. Spination of second article consisting of a superior longitudinal series of three spines, each extending from a tubercle; a loosely organized, subcircumferential row of about six small spines, beginning near the distal lateral condyle and passing medially and proximally around the article; two small spines on the base of the fixed finger; and a small spine associated with the distal medial condyle. Lateral surface with few spines compared to medial surface but with three lightly colored slit sensilla in a short longitudinal or sublongitudinal series associated with the distal lateral condyle. Fixed finger with tooth row composed of a proximal series of about six large, subequal, triangular teeth and distal series of five shorter teeth with steeply sloped proximal edges and gradually sloped distal edges. Moveable finger of chela with smooth dark cuticle. Tooth row with



Figures 4–5.—Right chelicera of typical adult female *A. sudamericanus*. 4. Medial perspective. 5. Lateral perspective.

proximal series of three or four low triangular teeth followed by a staggered series of five large and four small triangular teeth. Tip of moveable finger offset prolaterally from tooth row such that tip and ultimate tooth embrace the end of the fixed finger when chela is closed.

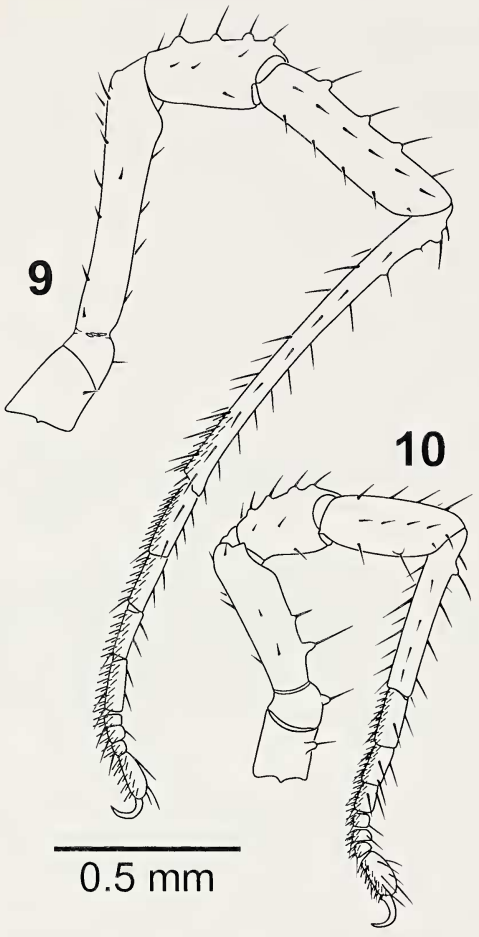
Pedipalp: Coxa: coxapophysis projecting ventrally, arranged transversely forming posterior border of stomotheca; anterior surface with soft cuticle, posterior surface with harder cuticle and with six to eight long dark setae (Fig. 2). Enditic "lips" formed by lobes of soft cuticle. Trochanter: inferior surface with large subcylindrical apophysis ending bluntly, typically bearing five or six terminal and subterminal spines. Otherwise with several small, submarginal spines (Fig. 6). Femur: proximal inferior surface with two large apophyses (Fig. 6). First inferior apophysis arising near proximal inferior margin, long, subcylindrical through most of length but with tapering terminal region ending in one spine; base of tapering region with three radially arranged evenly spaced subterminal spines. Second apophysis distally and retrolaterally adjacent to first apophysis, long, thin, slightly curved prolaterally, with one terminal spine. Small tubercle with terminal spine usually interposed between first and second inferior apophyses. Distal inferior surface (Fig. 8) with one short, tapering apophysis with one large terminal spine and one smaller subterminal spine; sometimes appearing as two basally fused apophyses of unequal length, each terminating with a single spine. Distal prolateral surface (Fig. 8) with large, tapering spike-like apophysis, terminal end very dark; in intact animal, spikelike apophyses from opposite pedipalps cross above bases of chelicerae. Middle third of superior surface with imperfect longitudinal row of three or four tubercle-based spines (Fig. 6). Distal third of superior prolateral surface with longitudinal row of three, large, closely spaced tubercle-based spines (Figs. 6, 8). Other surfaces with eight or so small scattered spines. Distal superior surface with three large, closely spaced, roughly transverse slit sensilla (Fig. 6). Patella: tapering apophysis emerging from inferior retrolateral surface, terminating in a single spine (Figs. 6, 7). Subcylindrical apophysis arising from inferior prolateral surface, terminating abruptly with "crown" of four spines (Figs. 7, 8). Superior



Figures 6–8.—Pedipalp of typical adult female *A. sudamericanus*. 6. Retrolateral surface of proximal articles. 7. Retrolateral surface of distal articles, perspective rotated slightly from that shown in 6. 8. Prolateral surface of distal articles. Abbreviations: *fe,* femur; *pa,* patella; *ta,* tarsus; *ti,* tibia; *tr,* trochanter.

surface with three imperfect rows of spines, each with three or four members. Inferior surface unarmed. Tibia: large subcylindrical apophysis projecting from distal prolateral surface and larger subcylindrical apophysis projecting from proximal retrolateral surface; both terminating in "crown" of four long, tapering, evenly spaced spines (Figs. 6–8). Superior prolateral surface with longitudinal row of three large tubercle-based spines, decreasing in size distally. Superior retrolateral surface with longitudinal row of three smaller spines. Superior surface with 0–2 small spines. Retrolateral surface with one spine arising subterminally and one arising at base of retrolateral apophysis. Inferior surface unarmed. Tarsus: inflated distally with brushlike array of about 40 spines; each spine with a dark base and translucent tip. Superior surface of thinner proximal region of tarsus with imperfect longitudinal row of three spines, proximal member of row associated with one prolateral spine and one retrolateral spine; proximal spines thus arranged in a roughly T-shaped pattern. Claw apparently absent.

Legs: Measurements of the leg segments are listed in Table 1. Coxa: inferior surface with 4–8 prominent, irregularly spaced tuber-



Figures 9–10.—Legs of typical adult female *A. sudamericanus*. 9. Leg I, right, retrolateral perspective. 10. Leg IV, right, retrolateral perspective.

cles, each with a single curved terminal spine (Figs. 2, 3). Cuticle uniform, light brown, with scattered small, dark denticles. Medial margin of coxae II–IV joining ventral body surface via lightly colored raised lobes. Inferior proximal surface of coxa IV with two, longitudinally arranged, ventrally projecting, blunt protuberances covered by sharp denticles; each protuberance ending with notably thickened spine; proximal protuberance large, more well developed than distal protuberance. Coxapophysis of leg I large, oval; fused to ventral body wall just posterior to pedipalpal coxapophyses. Coxapophysis of leg II very small. Trochanter: typically with four small spines arranged almost symmetrically near distal margin. Cuticle uniform, light brown, concolorous with coxa. Femur: shaft divided proximally by oblique circumferential groove (pseudoarticulation) forming distal border of femoral annulus; superior length of annulus shorter than inferior length (Figs. 9, 10). Annulus typically with one inferior spine, which on leg I emerges from a tubercle. Femur through telotarsus with five variably developed longitudinal rows of spines; i.e., superior (S), superior prolateral (SP), superior retrolateral (SR), inferior prolateral (IP) and inferior retrolateral (IR). Postannular shaft of femur with all spine rows. S, SP, SR present but imperfectly aligned especially distally, spines thus sometimes difficult to assign to specific rows; distal members largest, sometimes arising from tubercles. IR spines large, emerging from tubercles on leg I only. IP spines small. Cuticle of superior surface of annulus and basal part of postannular shaft lightly colored; inferior surface of annulus darker. Cuticle darkens along postannular shaft (central third appearing as dark brown band) then lightens distally. Patella: spine rows S, SP, SR present; S, SP with 4–6 members, SR with 2 or 3 members; IP, IR usually present, with one or two members. S spines arise from tubercles that tend to increase in size distally; spines in other rows lacking tubercles. Cuticle light brown proximally, lighter distally. Tibia: all spine rows present, symmetrically distributed, with four to seven members that are often regularly spaced. S spines arising from apophyses. One or two eccentric superior spines often present, especially distally. Distal one-fourth to one-fifth of inferior surface with numerous setae that increase in length distally. Cuticle of central half brown, grading into lighter brown proximally and even lighter brown distally. Basitarsus (= metatarsus): all spine rows present, symmetically arranged, typically with 5 to 12 members depending on basitarsal length; spines of S, SP, SR regularly spaced within rows. Proximal (first) member of S small, tending to be located slightly retrolateral to primary row axis; second much larger, extending from tubercle; third specialized, expressed as transverse pair of small, thin, closely spaced, erect spinules. IP, IR spines longer than those of other rows, especially distally. Cuticle light brown proximally and throughout most of length; distal one-fourth grades into distal light band. Telotarsus (= "tarsus"): formula of telotarsus: 7/9/8–9/8–9. First to penultimate articles showing regular decrease

Table 1.—Lengths of leg articles of holotype (in mm); body length = 1.2 mm, width = 0.9 mm.

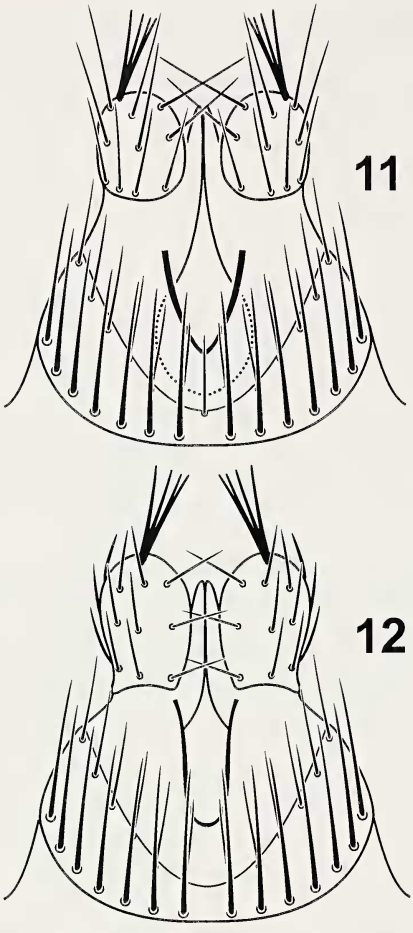
	Trochanter	Femur	Patella	Tibia	Basitarsus	Telotarsus
Leg I	0.14	0.52	0.22	0.30	0.46	0.50
Leg II	0.18	0.68	0.38	0.52	0.76	0.74
Leg III	0.14	0.54	0.32	0.36	0.66	0.68
Leg IV	0.19	0.82	0.38	0.54	1.00	0.80

in length, although antepenultimate article slightly inflated compared to adjacent articles. Ultimate article about as long as first or second article. All spine rows present. S, SP, SR spines well developed throughout telotarsus; IP, IR well developed on first two or three articles but replaced by and/or transformed into long paired setae on the distal inferior margin of each article. Inferior, prolateral and retrolateral surface with coat of short fine setae, coat of medium-length setae on inferior surface. Cuticle light brown throughout. Claw large, strongly curved.

Opisthosoma: Dorsal surface: tergite I typically with three rounded prominences, one large median prominence near anterior margin usually bearing one recurved spine (sometimes two) and one bilateral pair of smaller prominences located lateral and posterior to medial prominence, each bearing one recurved spine (Figs. 1, 3). Tergite II largest, typically with three rounded prominences; median prominence with one spine; one bilateral pair of posterolateral prominences each with one spine. Tergites III–VI short, becoming progressively shorter and more strongly recurved posteriorly, each with one row of typically 3 (sometimes 4) basally contiguous rounded prominences. Each prominence with a single recurved spine; median prominence usually slightly larger. Tergite VII platelike, posterior margin less recurved than preceeding tergites and bearing a single posterior median prominence with one terminal spine. Tergites VIII, IX and anal operculum apparently fused to form composite anal plate, although tergites may be discernable as two weakly defined rows of spines. Dorsal surface covered by dark, closely spaced denticles. Denticles less dense on tergal prominences and absent on transversely arranged, lightly colored sigillary bands that define tergal borders.

The description provided above is "typical," but there is substantial and frequent variation in the number, size and symmetry of tergal prominences, both within and between individuals. Median prominences may be divided sagittally to form two similarly or differently sized medial prominences, lateral prominences may be expressed on one side but not the other; two lateral prominences may exist on one side and one or none on the other, etc.

Ventral surface: sternite I (arculi genitales) triangular median plate with anteromedian apex; medial anterior margin abutting coxapophyses of pedipalp, lateral anterior margin abutting posterior margin of coxapophyses of leg I. Posterior lateral "corners" of triangle extend laterally as continuously narrowing strips until meeting coxapophysis of leg II, then turn posteriorly and continue along medial margins of coxae III and IV and posterior margin of coxa IV to join remaining opisthosomal cuticle. Genital sternite and operculum: genital operculum with broad, procurved posterior margin (Fig. 2). Attached lateral margins subparallel posterior to coxae, transverse width of intracoxal region gradually reduced anteriorly. Median longitudinal region raised slightly, but this ends abruptly anteriorly, as indicated by distinct transverse discontinuity at base of free lobe. Free lobe expanded posteriorly, lateral margins curve medially to meet at blunt anteromedian point. Marginal and submarginal surfaces of operculum with irregular array of about 16 to 18 tubercles each bearing one curved terminal spine; anterior margin of free lobe also with three or four bilateral pairs of simple setae. Cuticle of attached portion of operculum with numerous, closely spaced, transverse rows of small dark denticles; denticles not so organized on free lobe. Opercular cuticle translucent, revealing paired sclerotized bands of ovipositor sheath and arrays of dark setae of ovipositor (Figs. 11, 12); operculum thus appearing to have two dark longitudinal stripes and a central lighter stripe. Softer, more flex-



Figures 11–12.—Ovipositor of *A. sudamericanus*. 11. Ventral perspective. 12. Dorsal perspective.

ible lateral cuticle of genital segment lateral to operculum with regularly spaced array of small dark denticles; occasionally with one or two pairs of tubercles each bearing a spine. Stigmata located within soft lateral cuticle just posterior to coxa IV; elongated transversely; margins with line of dark cuticle. Postgenital sternites: sternites represented by six short, well-defined transverse folds separated by deep grooves. Folds fade out laterally, generally not continuous with those separating tergites. Postgenital sternites 1–5 each with single transverse row of six to eight tubercles each with one terminal spine; tubercles fewer and smaller medially. Tubercles often forming imperfect, obliquely longitudinal rows spanning several adjacent sternites, intersegmental rows begin anteromedially and end posterolaterally. Anterior margin of first postgenital sternite procurved medially, receiving posterior margin of genital operculum. Fold separating postgenital sternites 5 and 6 more weakly developed laterally than anterior counterparts, medial region typically lacking fold, sternites appearing continuous. Postgenital sternite 6 without obvious transverse divisions, suggesting consolidation of sternites from two somites (i.e., sternites of opisthosomal somites VIII and XI); posterior margin forming anterior margin of anus.

Ovipositor: Trunk with two circumferential rows of long setae (Figs. 11, 12), setae of proximal row longer and thicker than those of distal row. Ventral and dorsal surfaces with pairs of longitudinal cuticular thickenings. Paired terminal lobes each with three loosely organized "whorls" of setae; terminates in four-branched sense organ. Medial valvelike projections between lobes.

Adult male: Unknown.

Immatures: The general morphology and color patterns of immature specimens are similar to those of the adult female. In general, however, immatures are more lightly colored than adults and the spination and associated cuticular structures (i.e., tubercles, protuberances and prominen ces) are either lacking or poorly developed. The pedipalpal tarsus is substantially less inflated distally and the terminal "brush" has fewer setae. The tergal prominences are either absent or very small in comparison to the adult, and the tubercles associated with the sternal setae of the opisthosoma are less developed. The free terminal lobe of the genital operculum is absent, and the coxapophyses of leg 1 are clearly visible.

DISCUSSION

There are several potential problems in the taxonomy of *Austropsopilio* that will require a generic revision to resolve, although such an undertaking will be hindered by the small number and limited accessibility of specimens. First, the genus was originally described from an immature individual (Forster 1955) and, given the substantial differences in morphology of immatures and adults in *A. sudamericanus*, it is possible that the generic diagnosis is not strictly applicable even to adults of the type species. For example, early instars of *A. sudamericanus* have tergal spines but lack the large spine-bearing prominences of the adult. Indeed, it is possible that either *A.*

altus or *A. cygneus* is synonymous with the generic type species, *A. noveahollandiae*. Second, Shear (1975, 1996) has argued that *Tasmanopilio* is similar enough to *Austropsopilio* to warrant synonymizing the genera. Indeed, the absence of an elongate eye tubercle in *Tasmanopilio* was the principal criterion cited by Hickman (1957) for distinguishing this genus from *Austropsopilio*, and this distinction has been eliminated with the discovery of *A. sudamericanus*. Furthermore, the pedipalps of the two genera are very similar (Shear 1996). Specifically, most articles of the pedipalp (i.e., trochanter to tibia) have at least one large spine-bearing apophysis and the tarsus of the female is expanded distally, has a brush-like array of setae, and lacks a claw. In addition, the two genera have a single spine-bearing tubercle on the proximal superior surfaces of the pedal basitarsi (Forster 1955; Hickman 1957; Cantrell 1980; Figs. 9, 10). Still, while it is clear that *Tasmanopilio* and *Austropsopilio* are very similar, it may be possible to offer a modified generic diagnosis for *Austropsopilio* that excludes *Tasmanopilio*: (1) a single anterior pair of protuberances on the eye tubercle; (2) spine-bearing tubercles on the carapacal margin; and (3) opisthosomal tergum with spine-bearing tubercles or prominences. It remains for a taxonomic revision, preferably informed by acquisition of new material and phylogenetic analysis, to determine whether *Austropsopilio* and *Tasmanopilio* should be synonomized.

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LITERATURE CITED

Banks, N. 1892. A new genus of Phalangiidae. Entomological Society of Washington 2:249–251.

Cantrell, B.K. 1980. Additional Australian harvestmen (Arachnida: Opiliones). Journal of the Australian Entomological Society 19:241–253.

Cokendolpher, J.C. & E.A. Maury. 1990. *Austropsopilio* harvestmen (Opiliones, Cyphopalpatores, Caddidae) discovered in South America. Boletin de la Sociedad de Biologia de Concepción 61: 59–62.

Forster, R.R. 1948. A new genus and species of the family Acropsopilionidae (Opiliones) from New Zealand. Transactions of the Royal Society of New Zealand 77:139–141.

Forster, R.R. 1955. Further Australian harvestmen (Arachnida: Opiliones). Australian Journal of Zoology 3:354–411.

Gruber, J. 1974. Bemerkungen zur Morphologie und systematischen Stellung von *Caddo*, *Acropsopilio*, und verwandtern Formen (Opiliones, Arachnida). Annalen des Naturhistorisches Museum in Wien 78:237–259.

Hickman, V.V. 1957. Some Tasmanian harvestmen of the sub-order Palpatores. Papers and Proceedings of the Royal Society of Tasmania 91:65–79.

Hirst, S. 1925. On some new genera and species of Arachnida. Proceedings of the Zoological Society of London 1925:1271–1280.

Lawrence, R.F. 1931. The harvest spiders of South Africa. Annals of the South African Museum 29: 341–508.

Shear, W.A. 1975. The opilionid family Caddidae in North America, with notes on species from other regions (Opiliones, Palpatores, Caddoidea). Journal of Arachnology 2:65–88.

Shear, W.A. 1996. *Hesperopilio mainae*, a new genus and species of harvestman from Western Australia (Opiliones: Caddidae: Acropsopilioninae). Records of the Western Australian Museum 17:455–460.

Silvestri, F. 1904. Descrizione di un nuovo genere di Opilionidi del Chile. Redia 2:254–256.

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